CLAIMS

1/ A method of measuring the propagation time T_p of an ultrasound signal between two spaced-apart transducers, one constituted by an emitter and the other by a receiver, the emitter transducer being subjected to an excitation signal causing an ultrasound wave to be emitted towards the receiver transducer, said ultrasound wave causing the receiver transducer to output a receive signal, the method comprising the following steps:

· beginning a measurement of an intermediate propagation time T_{int} at the beginning of emitter transducer excitation;

· detecting the receive signal output by the receiver transducer and counting the oscillations in said receive signal;

· stopping the measurement of the intermediate propagation time T_{int} when an i^{th} oscillation is detected; and

· determining the propagation time T_p of the signal by taking the difference $T_{int} - i \times T_e$.

2/ A method according to claim 1, wherein measurement of the intermediate propagation time T_{int} is stopped for an i^{th} oscillation of the receive signal that corresponds to the receive signal being at a maximum amplitude.

3/ A method according to claim 1, wherein measurement of the intermediate propagation time T_{int} is stopped for an i^{th} oscillation of the receive signal, where $i \neq 1$.

4/ A method according to claim 1, wherein the emitter transducer is subjected to an excitation signal comprising n successive pulses of period T_e.

5/ A method according to claim 1, wherein the measurement of the intermediate propagation time T_{int} is stopped for an i^{th} oscillation of the receive signal, where $i=n$.

6/ A method according to claim 1, wherein measurement of the intermediate propagation time T_{int} is stopped for an i^{th} oscillation of the receive signal, where, preferably, i=4 or i=5.

7/ A method according to claim 1, wherein the excitation signal is made up of n pulses, where n≠1.

8/ A method according to claim 1, wherein the excitation signal is made up of n pulses where, preferably, n=4 or n=5.

9/ Apparatus for measuring the propagation time T_p of an ultrasound signal, the apparatus comprising:

· means for forming an excitation signal;

· an emitter transducer connected to said means for forming an excitation signal;

· a receiver transducer to transform the ultrasound signal into a receive signal; and

· comparator means connected to said receiver transducer to compare the amplitude of the receive signal with a trigger threshold voltage and to generate a signal representative of oscillations of said receive signal;

the apparatus further comprising :

· means for measuring a fixed time T_0 connected to said means for forming an excitation signal in order to measure a fixed time T_0 from the instant at which the emitter transducer is excited;

· means for determining an i^{th} oscillation, which means are connected to said comparator means, to count the number of oscillations in the receive signal and to detect the i^{th} oscillation; and

· means for measuring a variable time T_{IEX} between the end of measuring T_0 and detecting the i^{th} oscillation.

10/ Apparatus for measuring the propagating time T_p of an ultrasound signal according to claim 9, wherein the means for measuring a fixed time T_0 comprise a counter and a decoder.

11/ Apparatus for measuring the propagating time T_p of an ultrasound sound according to claim 9, wherein the means for determining the i^{th} oscillation comprise a counter and a decoder.

12/ A device for measuring the propagation time T_p of an ultrasound signal according to claim 9, wherein the means for measuring the variable time T_{IEX} comprise a time expander circuit.